

Fig. 1A

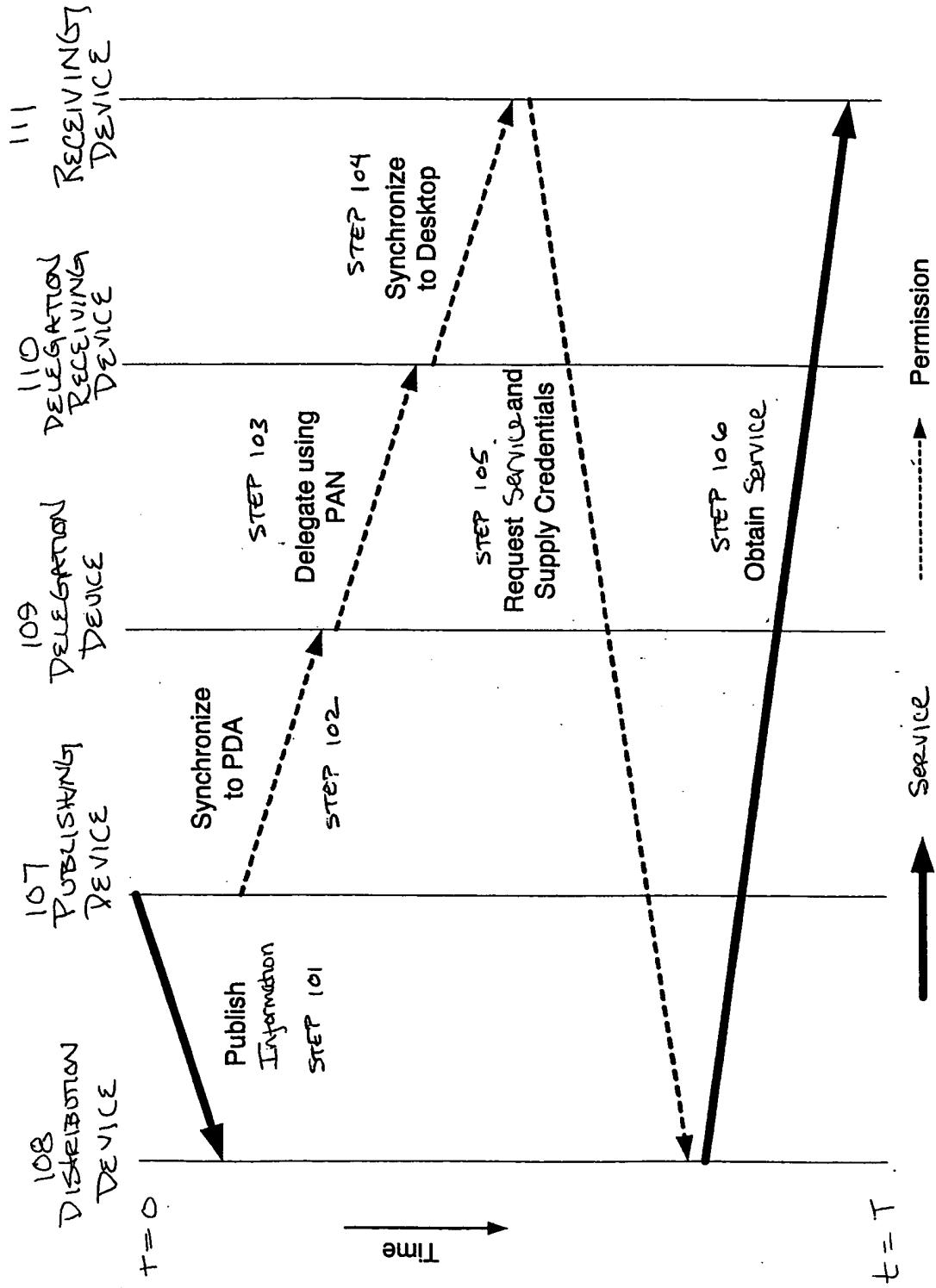
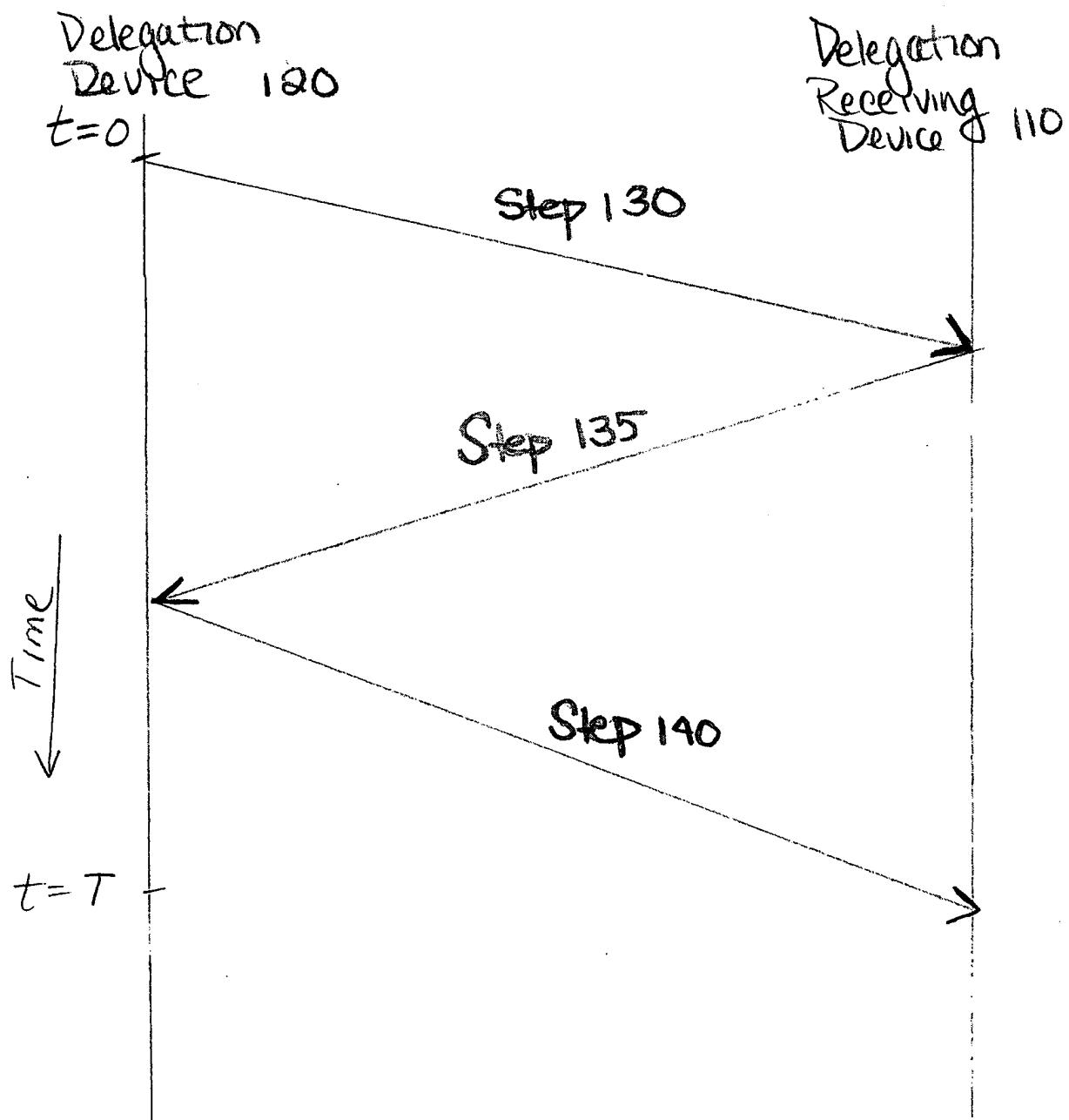


FIG. 1B



Data Structure Definitions in ASN.1

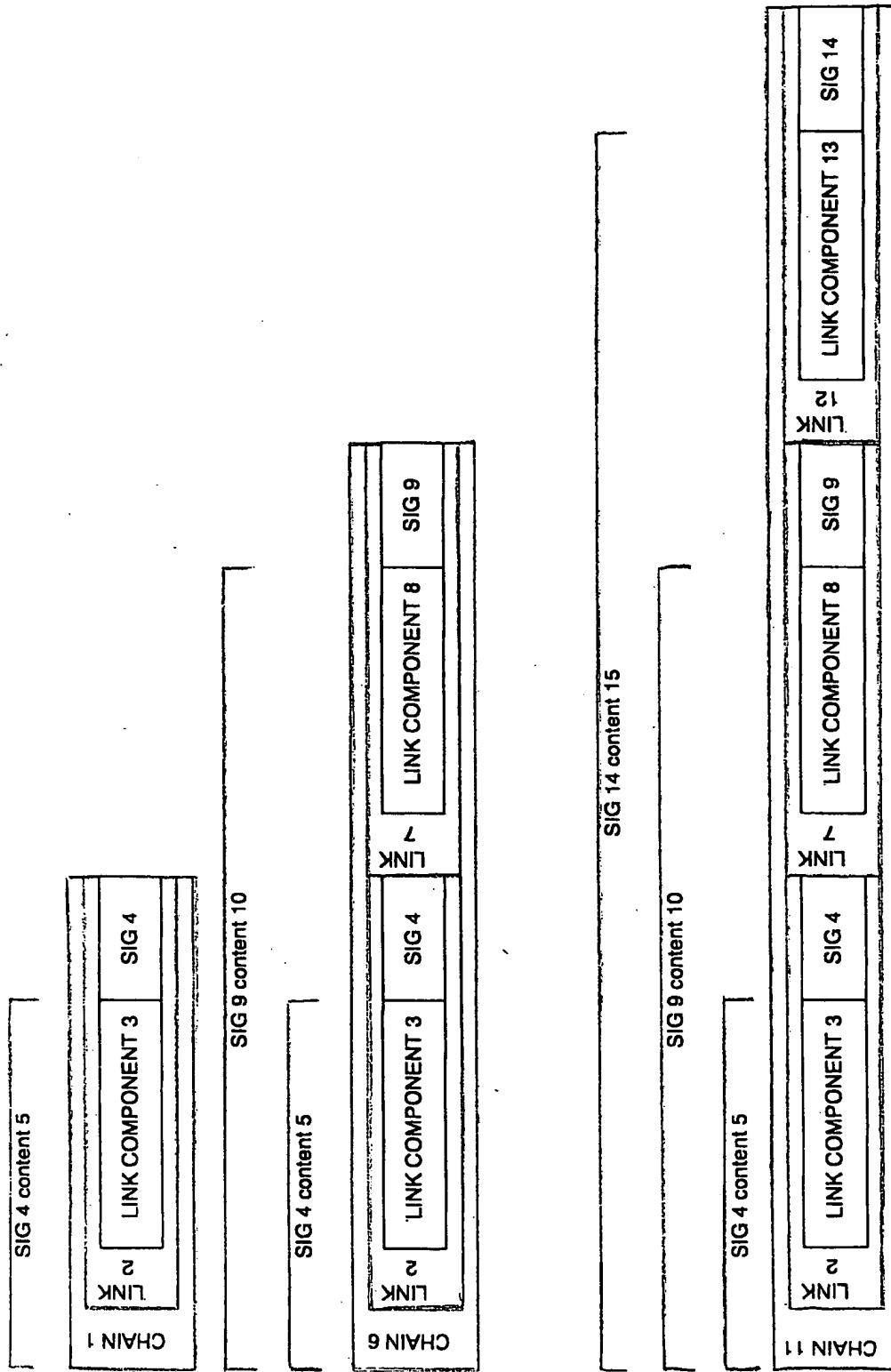
```
permissionChain ::= SEQUENCE OF permissionLink

permissionLink ::= SEQUENCE {
    permissionLinkComponent permissionLinkComponent,
    Signature OCTET STRING
}

permissionLinkComponent ::= SEQUENCE {
    Name OCTET STRING,
    Uri OCTET STRING,
    Description OCTET STRING,
    Note OCTET STRING,
    Version INTEGER,
    Src_p INTEGER,
    Src_q INTEGER,
    Src_g INTEGER,
    Src_pub INTEGER,
    Src_x509cert OCTET STRING,
    Src_email OCTET STRING,
    Subj_p INTEGER,
    Subj_q INTEGER,
    Subj_g INTEGER,
    Subj_pub INTEGER,
    Subj_x509cert OCTET STRING,
    Subj_email OCTET STRING,
    Delegate BOOLEAN,
    Read BOOLEAN,
    Write BOOLEAN,
    validFrom GeneralizedTime,
    validTo GeneralizedTime
}
```

FIG. 1C

Fig. 1D



## System Overview

FIG.2A

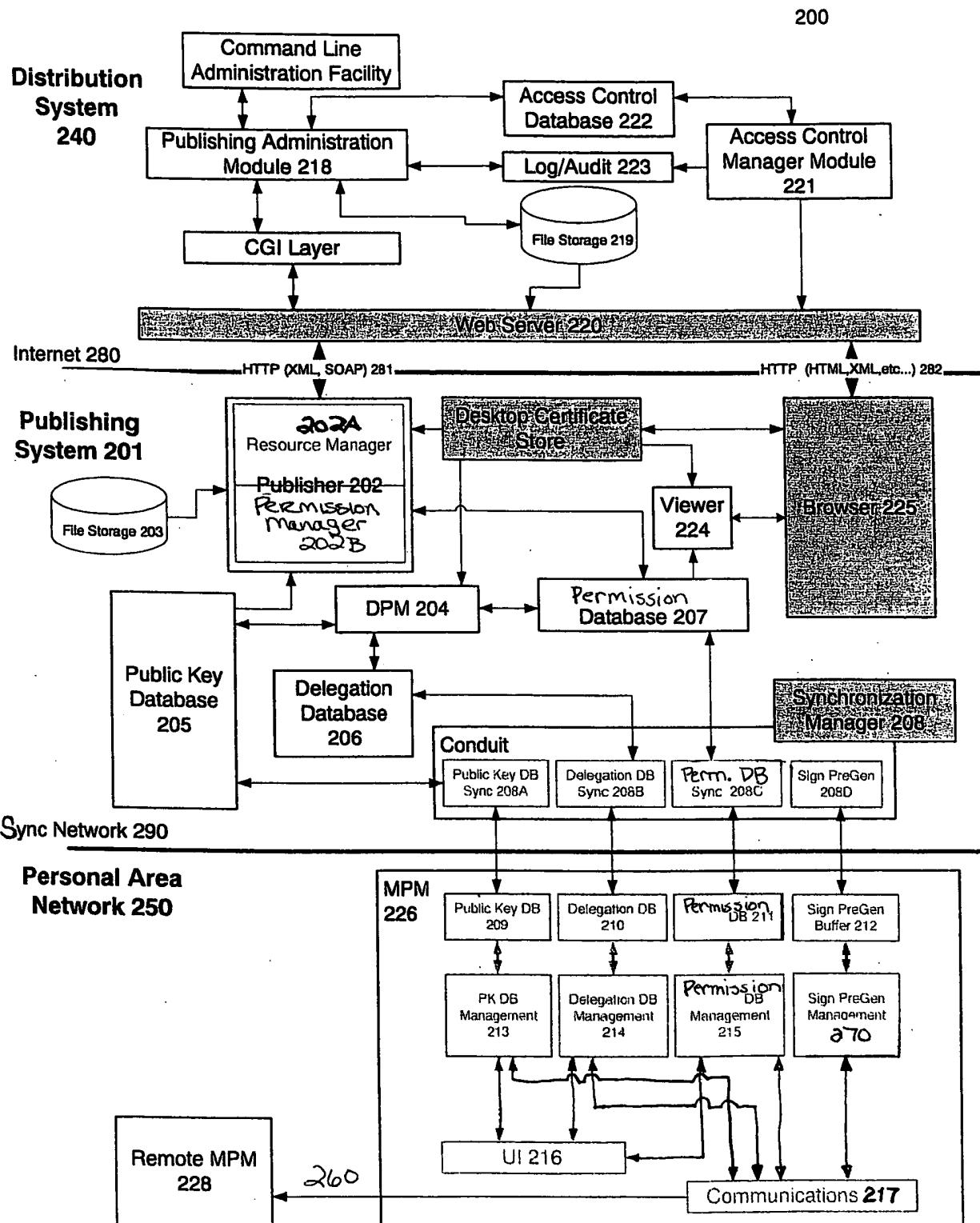


FIG. 2B

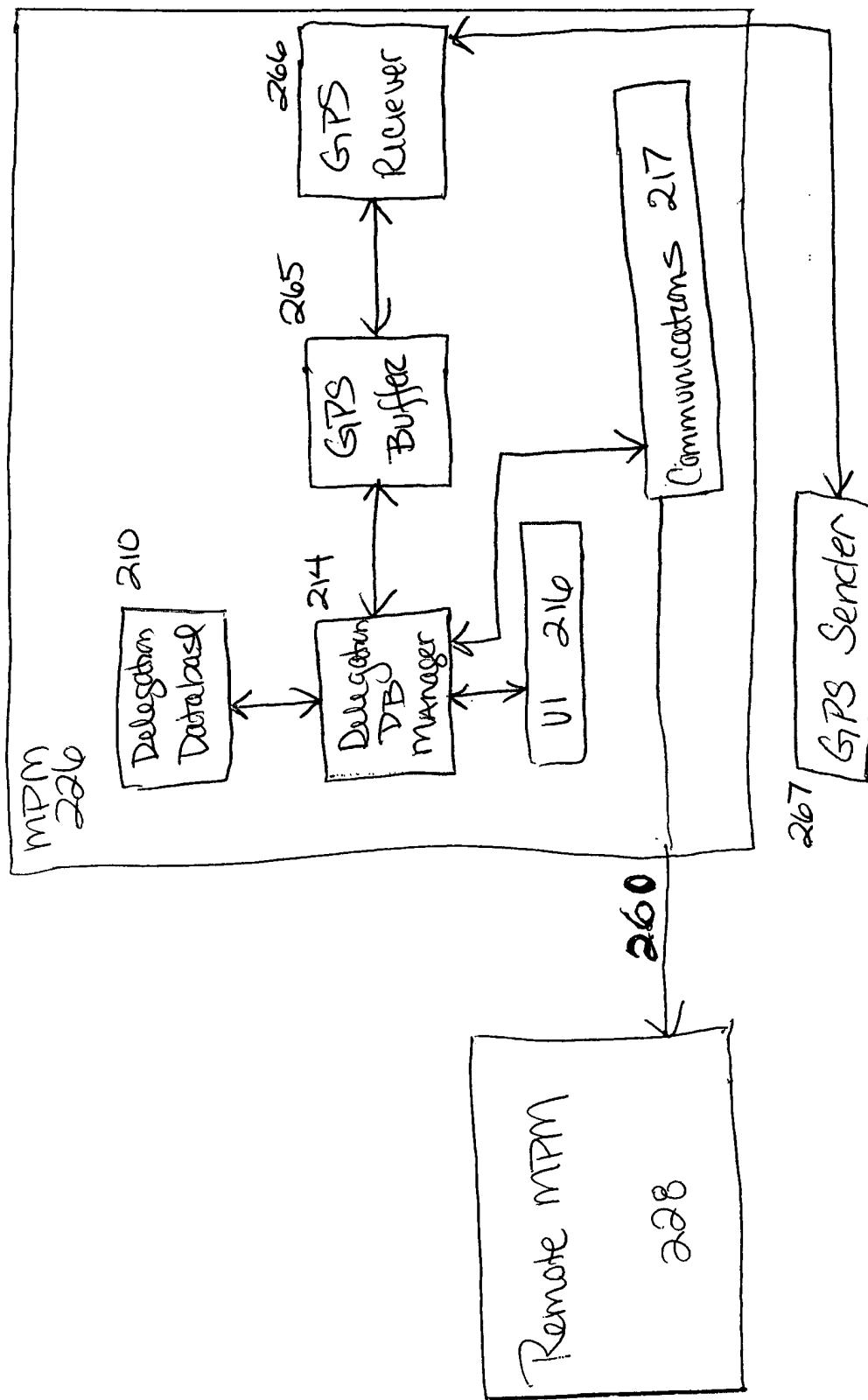
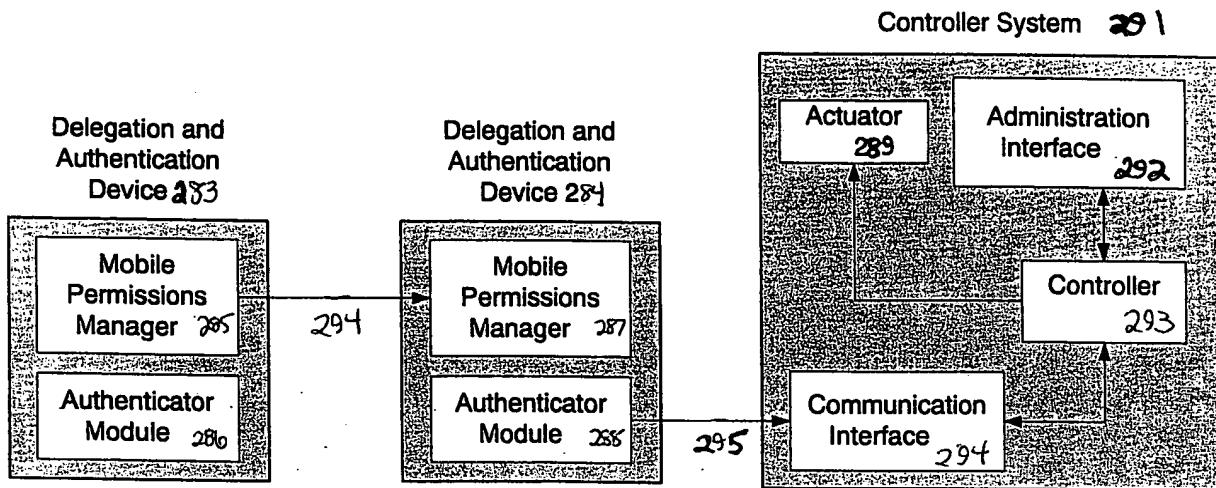


FIG. 2C



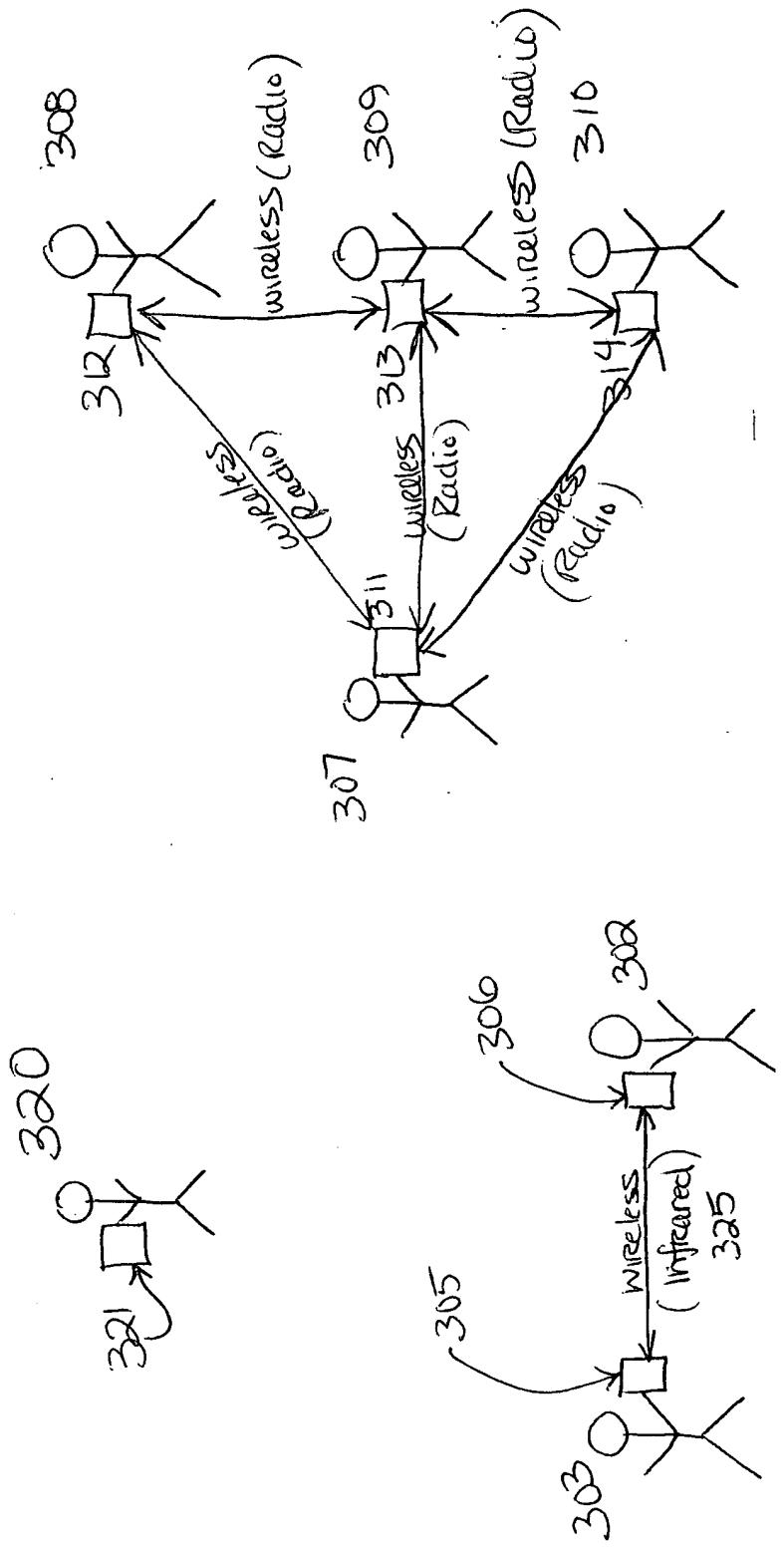


Fig. 3A

Fig. 3B

Fig. 4

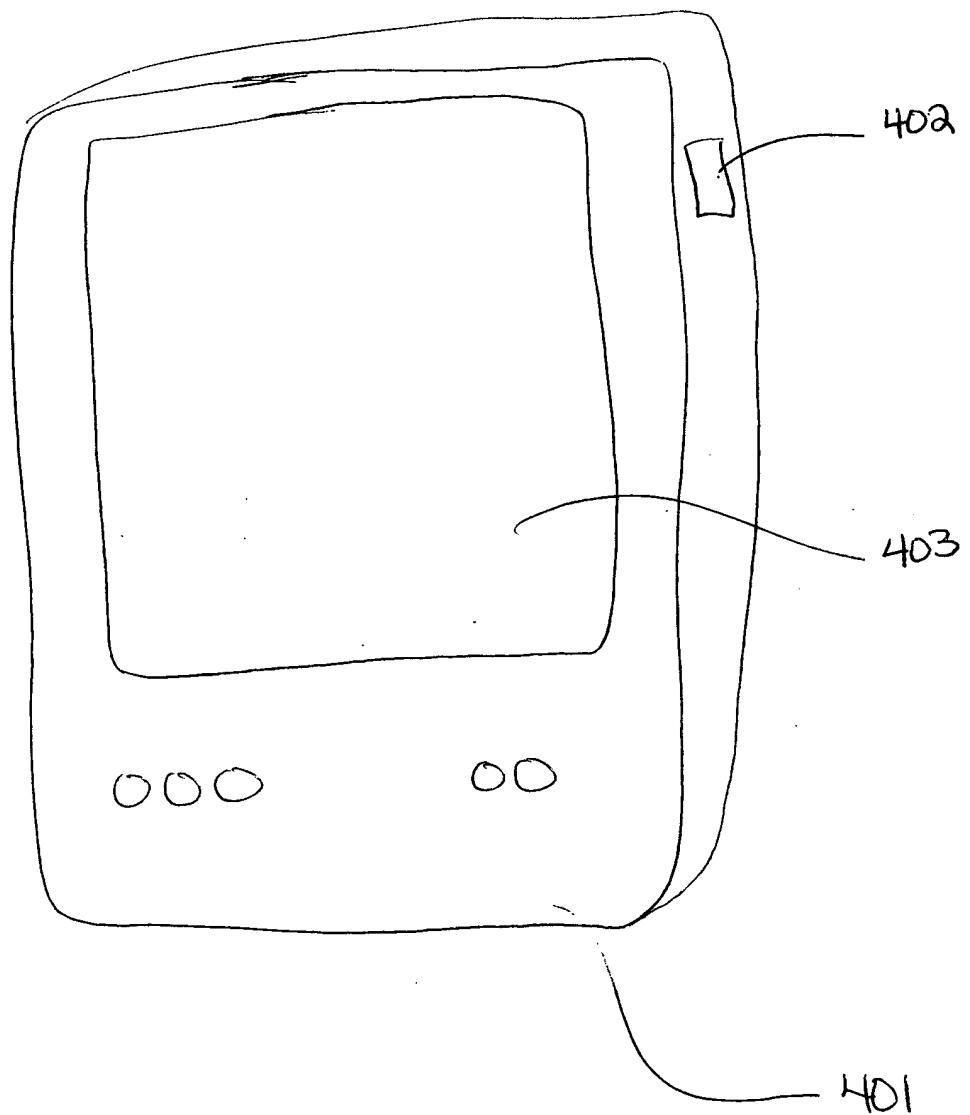


FIG. 5

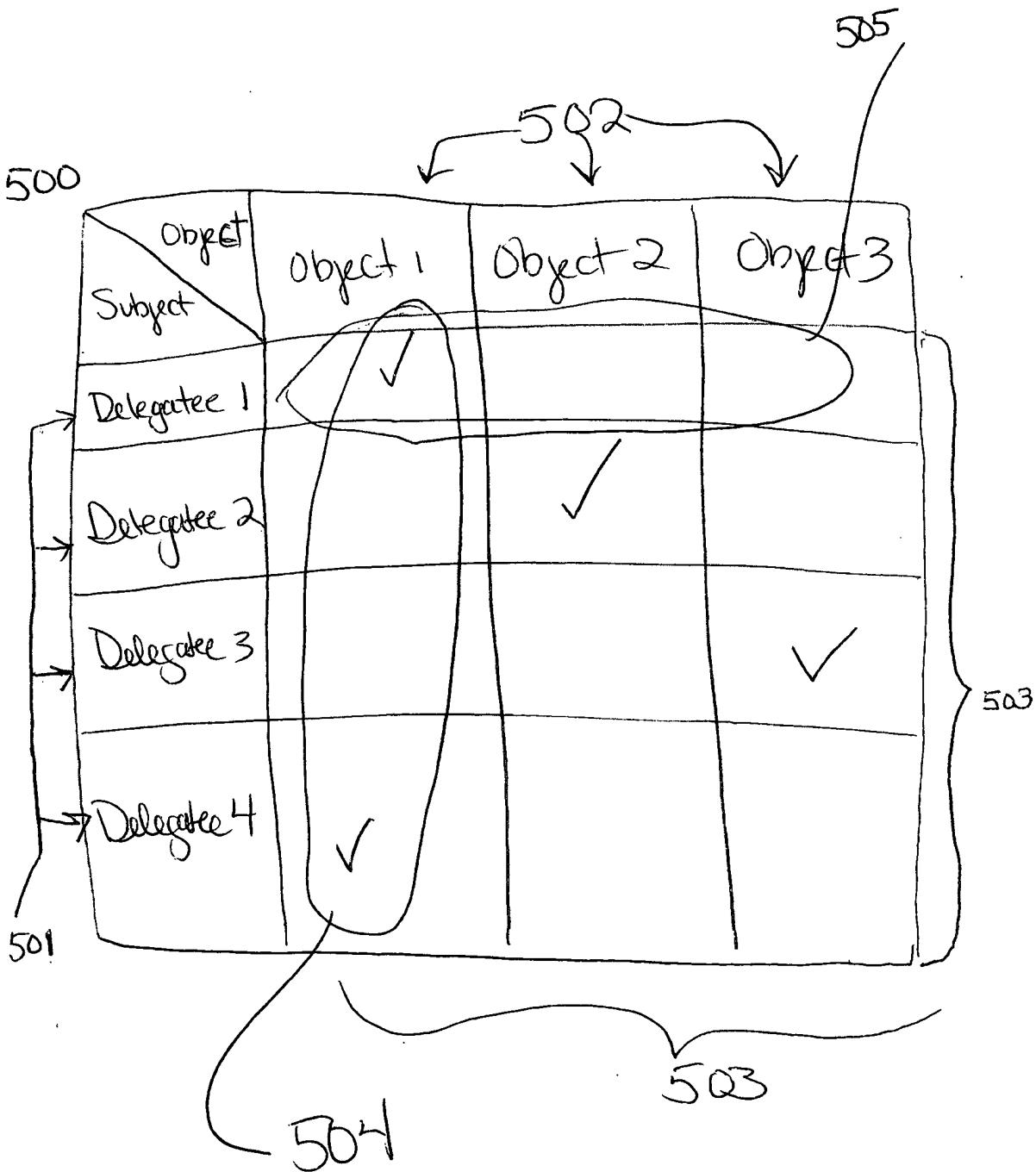
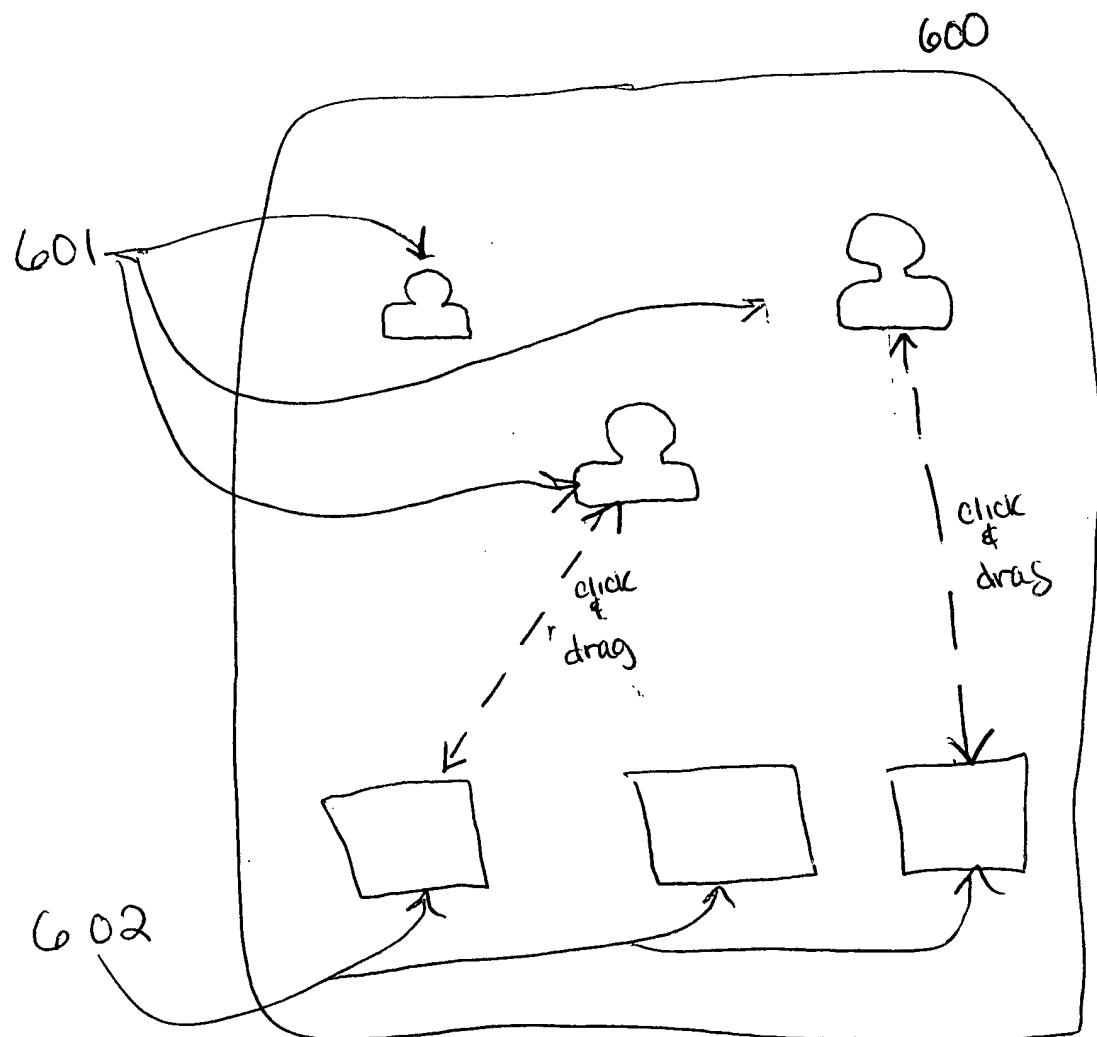


Fig. 6



Sending Permission as part of a header within an HTTP request.  
(See <http://www.ietf.org/rfc/rfc2616.txt>).

```
GET /resource/ HTTP/1.1
Accept: image/gif, image/x-bitmap, image/jpeg, image/pjpeg,
application/vnd.ms-powerpoint, application/vnd.ms-excel,
application/msword, /*
Accept-Language: en-us
Accept-Encoding: gzip, deflate
User-Agent: Mozilla/4.0 (compatible; MSIE 5.01; Windows NT 5.0)
Vchain: 50U+F61o1MMJzRmZs6QNRhx1UE3artX4ax56AJdJxYR7dzyPNglg+cwEOzzjT+
v8ywbpuyugQvj1uZSSVdfkbje/C+NV8sLfp5d3eaTykzeP+siJx17wg3njzn2mLOnRKrXw
WuX6gW3gR76zVuIz0y1wS9bZzSiu+ImN/SaHRS3eqBFPL7Ye0lJzin4jH81046kLpiXB+O
C1oFRqsCmy5/JCrgvR01Rw2rolg6uXgK8xDybfSPXPKJx4w1A0d9GdGAqRycOGFoXtyszps
+bASvdt2UJMssCXAKTw5bi+sUzuTbeX2xPJwDsPvuevICZHVGwnqJemvVUrH1DdhnmZyf
ZfTqeZ6sYZACvsAiCYghRB6fK9JJV/vj9Czf1vfyFPfYYH75ONhJMdDr5qrVbSm4hK2GFZ
IVPnyxYHwTafKHhbU2aQ5KFZbBGMwIikfBRMVfsqz3hpKa5Pd+NZELiWq4FWlWgrIzL+jw
Le1CfDk2V4SntsK+CFxBVGbU6dWpQYe2x0Bjat5yjbgYfXdz/vXfnxjHoAiUYwt4ZNwK0+
UG78+E1rtw2UcIUPuQoCpCXh9EMeaACC7gSKY2KfuY10FeCHZ00c16a4M82DUtE6JhrX6U
fR08r9QmxVnZu0/MW2vbWNs6rCuvs78zWpChy3V11bxTyofETq9WofZ3u+bomL8WgchTd
/QPyHMaky37tXEhrjZxUkgJtI0oA12kVaTDERIwBnhQYM3mp48n8wCq8qH2JP78DSOQwC
HMolJQPmjfaOxaCR5wE9mhJGHjtTOpXx3GkLN1NuZYq7tbxYznGNJ2VgwUPpCQppohcWmF
B17790cTc59zt9kV6A3MyeI/lZCP5iW+VjPEa6h5CWhqHDT3mvDXSAJ8Wx66XiIEJmtzil
1Dpnt0phJpCDAPyM2XO2bJGrPnimSbUsaELQWdMmtUyczy5TDI1pqjKMNUlytlHdmN2jly
2+hHplkzgxxXkh1I/Jtc97X2GBbm7nlUnICG6sAbxq61BHx5sNs1TzWChjYhtFlMuCeZT
Umf1LBgGPgh6Uv3oyUVoasRmsKi6qbqweDdxXfZD3uFR/iJNLUzwnt3/PJwtPjPjHJ+Sia
/hkB9+a1MZXFskMQaBpAE7/BfzRHs+09fDTL+kBFd00w0fvkTo9AlfVF99wiAJ0hZt7q+e
GWkPi5SRO+9/T710r7wNvC9NELRfsziq/v+8LM179yjjCm0chAZTv09iA8i28gQotzjdFX
1fE3vL0wmrP/61GSfqZhWc2Ho/m7FmqA9pJQVCRsVXXQOSWAZdPC3a75Jxyoa8hHDxgluK
RaAF1xQboHeR1Z9GQHoi9ucQORhrbIu0S20Afj99QjmszP3gQ64Pw+EakfS+1YQYbauY9
Z+8bRf+G8JnhRZIvcyu5y1RW74goguqs6BSf6NcuC3rBJhf30xn151/a8SraFtzUR4rv+e
qjQyE=
Connection: Keep-Alive
Host: www.websitexyz.com
HTTP/1.0 200 OK
Content-Length: 16485
Content-Type: text/html
<html><head><title>WebsiteXYZ</title>
...

```

FIG. 7.

Sending the permission as part of a "cookie" within an HTTP request  
(see <http://www.ietf.org/rfc/rfc2616.txt> and <http://www.ietf.org/rfc/rfc2109.txt>).

GET /resource/ HTTP/1.1  
Accept: image/gif, image/x-bitmap, image/jpeg, image/pjpeg,  
application/vnd.ms-powerpoint, application/vnd.ms-excel,  
application/msword, \*/\*  
Accept-Language: en-us  
Accept-Encoding: gzip, deflate  
User-Agent: Mozilla/4.0 (compatible; MSIE 5.01; Windows NT 5.0)  
Cookie: Vchain=50U+F61olMMJzRmZs6QRhx1UE3artX4ax56AJdJxYR7dzyPNglg+cw  
EOzzjT+v8ywbpvyuugQvj1uZSSVdfkbje/C+NV8sLfp5d3eaTykzeP+siJx17wg3njzn2mL  
OnRKrXwWuX6gW3gR76zVuIz0y1ws9bZzSiu+ImN/SaHRS3eqBFPL7Ye0lJzin4jH81046k  
LpiXB+OCloFRqsCmy5/JCrgvR01Rw2rolg6uXgK8xKdybfSXPKJx4w1A0d9GdGAqRycOGF  
oXtyzps+bASvdt2UJMssCXAKTw5bi+sUzuTbeX2xPJwDsPvuevICZHVGwnqJemvVUrH1DD  
hnMzYzFZfTqeZ6sYZCvsAiCYghRB6fK9JJV/vj9CzF1vfyFPfYYH75ONHjMdDr5qrVbSm  
4hK2GFZIVPnyxYHwTafKHhbU2aQ5KFZbBGMwIikfBRMVfsqz3hpKa5Pd+NZELIwQ4FWlWg  
rIzL+jwLe1CfDk2V4SntsK+CFxBVGbU6dWpQYe2x0Bjat5yjbgYfXdz/vXfNxjHoAiUYwt  
4ZNwK0+UG78+E1rtw2UoIUPuQoCpCXh9EMeaACC7gSKY2KfuY10FeCHZ00c16a4M82Dute  
6JhrX6UFRO8r9QmxVnZu0/MW2vbWNS6rCUvsw78zWpChy3V1lbxTyofETq9WofZ3u+bomL  
8WgchTd/QPyHmaky37tXEhrjZxUkgJtI0oA12kVaTDERIwBnhQYM3mzp48n8wCq8qH2JP7  
8DSOQwCHMolJQPmjfaOxaCR5wE9mhJGHjtTOpxx3GkLN1NuZYq7ttxYznGNJ2VgwUPpCOp  
pohcWmFB17790cTc59zt9kV6A3MyeI/1ZCP5iW+VjPEa6h5CWhqHDT3mvDXSAJ8Wx66XiI  
EJmtzil1Dpnt0phJpCDAPyM2XO2bJGrPnimSbUsaELQWdMmtUyczy5TDIlpqjKMNUlyt1H  
dmN2jly2+hHplkzqxxXKhi1I/Jtc97X2GBbm7n1UnitCG6sAbxq61BHx5sNs1TzWChjYhtF  
1MuCeZTUmflLBgGPgh6UV3oyUVoasRmsKi6qbqweDdxXfZD3uFR/iJNLUzwnt3/PJwtPjp  
.JHJ+SIa/hkB9+alMZXfSkMQaBpAE7/BfzRHs+09fDTL+kBFd00w0fvkTo9A1fVF99wiAJ0  
hZt7q+eGWkPi5SRO+9/T710r7wNvC9NELRfsziq/v+8LM179yjjCm0chAZTv09iA8i28gQ  
otzjdFX1fE3vL0wmrP/61GSfqZhWc2Ho/m7FmqA9pjQVCRsVXXQOSWAZdPC3a75Jxyoa8h  
HDxgluKRaAF1xQboHeR1Z9GQHoia9ucQORhrbIu0S2OAfj99QjmszP3gQ64Pw+EakfS+lY  
QYbauY9Z+8bRf+G8JnhRZIvcyu5y1RW74goguqs6BSf6NcuC3rBJhf30xn151/a8SraFtz  
UR4rv+eqjQyE=  
Connection: Keep-Alive  
Host: [www.websitexyz.com](http://www.websitexyz.com)  
HTTP/1.0 200 OK  
Content-Length: 16485  
Content-Type: text/html  
<html><head><title>WebsiteXYZ</title>  
...

FIG. 8

## Sending the permission as part of a URL

[http://www.websitexyz.com/resource/?Vchain=50U+F61o1MMJzRmZs6QNRhx1UE3a...  
rtX4ax56AJdJxYR7dzyPNglg+cwEOzzjT+v8ywbpuyugQvj1uZSSVDfkbe/C+NV8sLfp5d  
3eaTykzeP+siJx17wg3njzn2mLOnRKrXwWuX6gW3gR76zVuIz0y1ws9bZzSiu+ImN/SaHRS  
3eqBFPL7Ye0lJzin4jH81046kLpiXB+OCloFRqsCmy5/JCrgvR01Rw2rolg6uXgK8xKdybf  
SXPkJx4w1A0d9GdGAqRycOGFoXtyzpS+bASvdt2UJMssCXAKTw5bi+sUzuTbeX2xPJwDsPv  
uevICZHVGwnqJemvVUrH1DDhnMzYzFZfTqeZ6sYAZCvsAiCYghRB6fK9JJV/vj9CzFlvfyF  
PfYYH75ONHjMdDr5qrVbSm4hK2GFZIVPnyxYHwTafKHhbU2aQ5KFZbBGMwIikfBRMVfsqz3  
hpKa5Pd+NZELIwQ4FWlWgrIzL+jwLe1CfDk2V4SntsK+CFxBVGBu6dWpQYe2x0Bjat5yjbg  
YfXdz/vXfNxjHoAiUYwt4ZNwK0+UG78+E1rtw2UoIUPuQoCpCXh9EMeaACc7gSKY2KfuY10  
FeCHZ00c16a4M82DUtE6JhrX6Ufr08r9QmxVnZu0/MW2vbWNs6rCUvsw78zWpChy3V1lbxT  
yofETq9WofZ3u+b0mL8WgchTd/QPyHMaky37tXEhrjZxUkgJtI0oA12kVaTDERIwBnhQYM3  
mzp48n8wCq8qH2JP78DSOQwCHMo1JQPmjfaOxaCR5wE9mhJGHjtTOpXx3GkLN1NuZYq7tbx  
YznGNJ2VgwUPpCQppohcWmFB17790cTc59zt9kV6A3MyeI/lZCP5iW+vjPEa6h5CWhqHDT3  
mvDXSAJ8Wx66XiIEJmtzil1Dpnt0phJpCDAPyM2XO2bJGrPnimSbUsaELQWdMmtUyczy5TD  
IlpqjKMNUlyt1HdmN2j1y2+hHplkzgxxXKhi1I/JtC97X2GBbm7n1UnICG6sAbxq61BHx5s  
Ns1TzWChjYhtF1MuCeZTUmf1LBgGPgh6Uv3oyUVoasRmsKi6qbqweDdxXfZD3uFR/iJNLuz  
wnt3/PJwtPjpJHJ+SIa/hkB9+almZXfSkMQaBpAE7/BfzRHs+09fdTL+kBFdO0w0fvkTo9A  
1fVF99wiAJ0hz7q+eGWkPi5SRO+9/T710r7wNvC9NELRfsziq/v+8LM179yjjCm0chAZTv  
09iA8i28gQotzjdFX1fE3vL0wmrP/61GSfqZhWc2Ho/m7FmqA9pJQVCRsVXXQOSWAZdPC3a  
75Jxyoa8hHDxg1uKRaAF1xQboHeR1Z9GQHoi9ucQORhrbIu0S20Afj99QjmszP3gQ64Pw+  
EakfS+1YQYbauY9Z+8bRf+G8JnhRZIvcyu5y1RW74goguqs6BSf6NcuC3rBJhf30xn151/a  
8SraFtzUR4rv+eqjQyE=](http://www.websitexyz.com/resource/?Vchain=50U+F61o1MMJzRmZs6QNRhx1UE3a...)

FIG. 9

Fig. 10

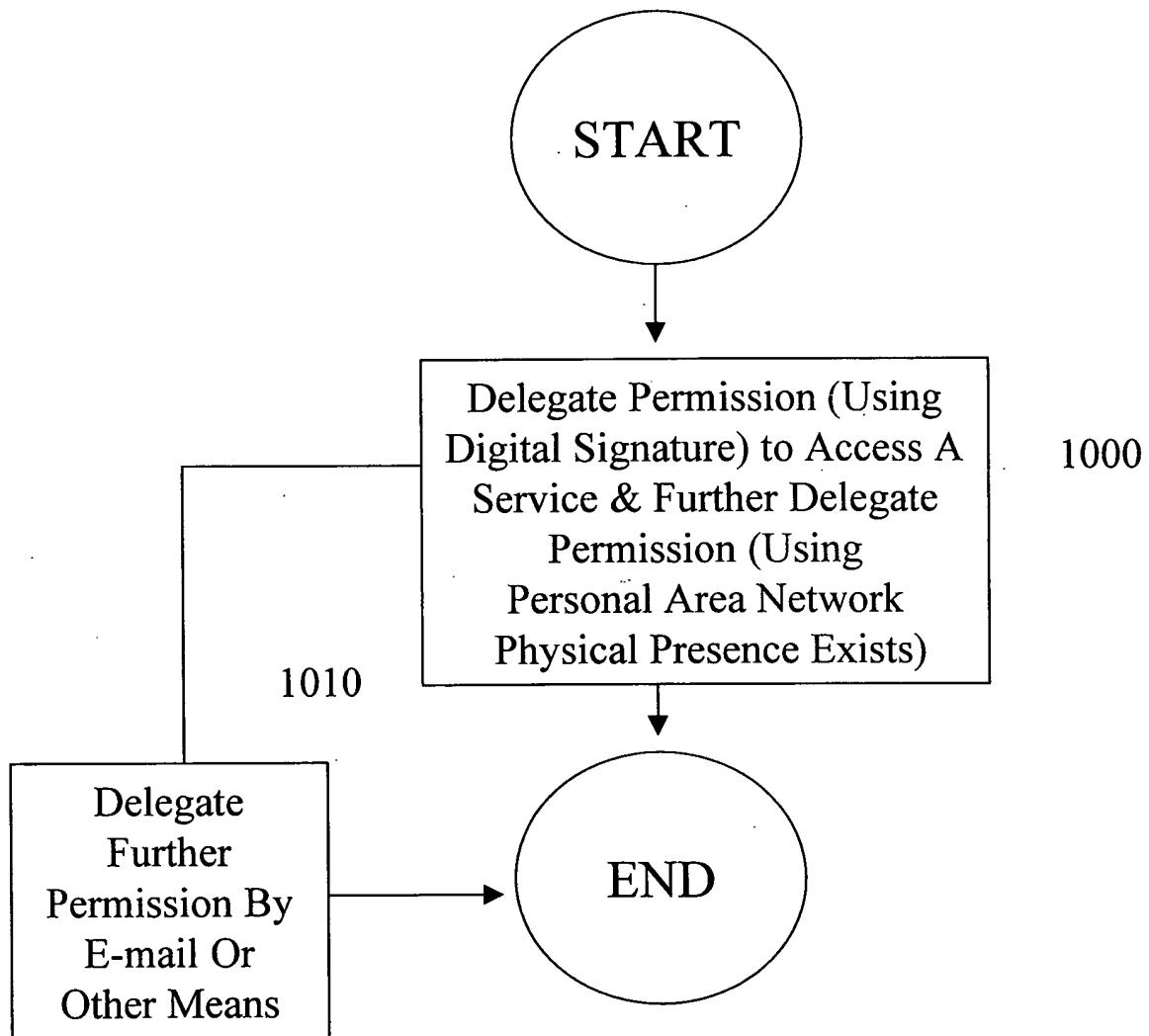


Fig. 11

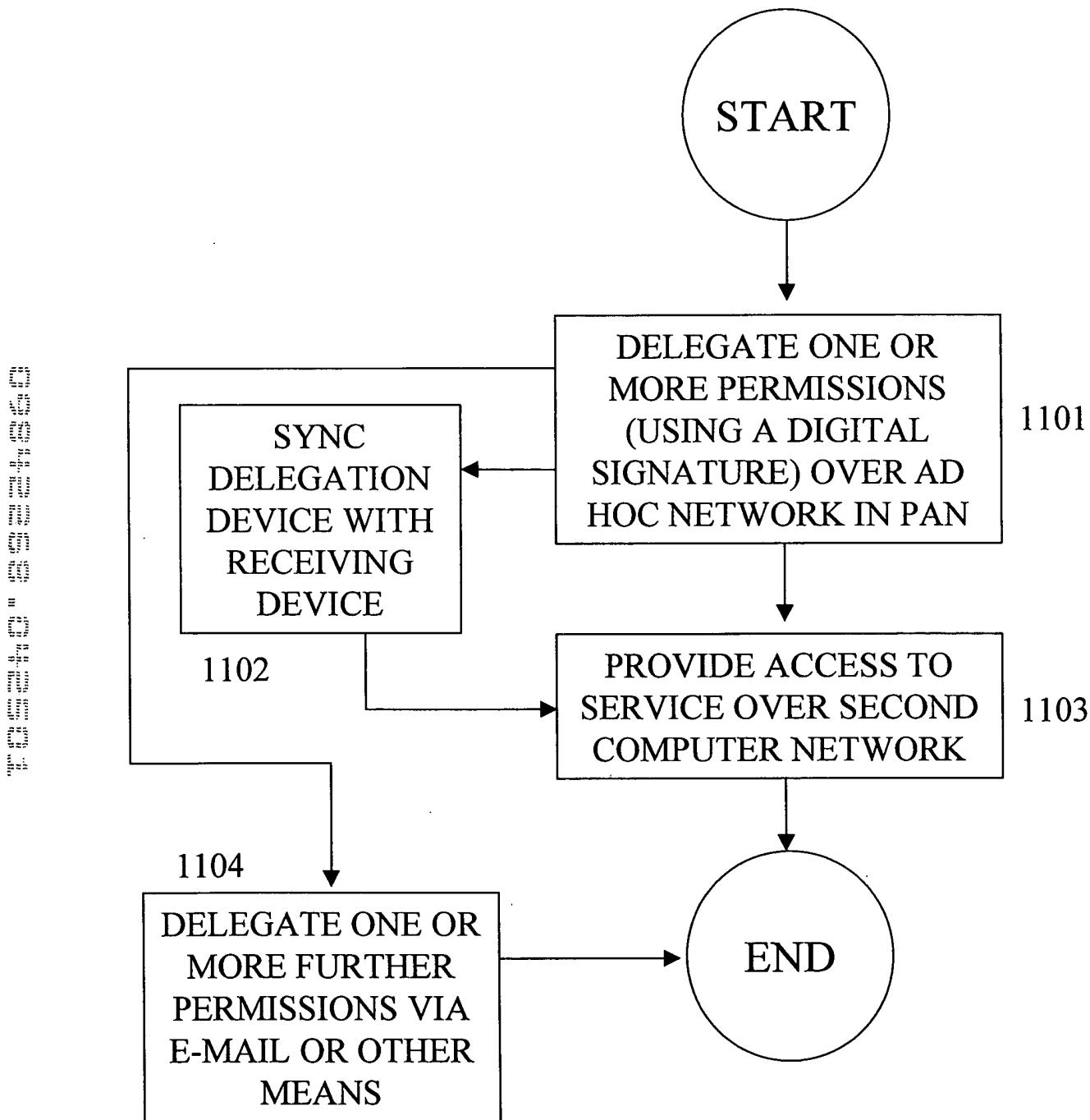


Fig. 12

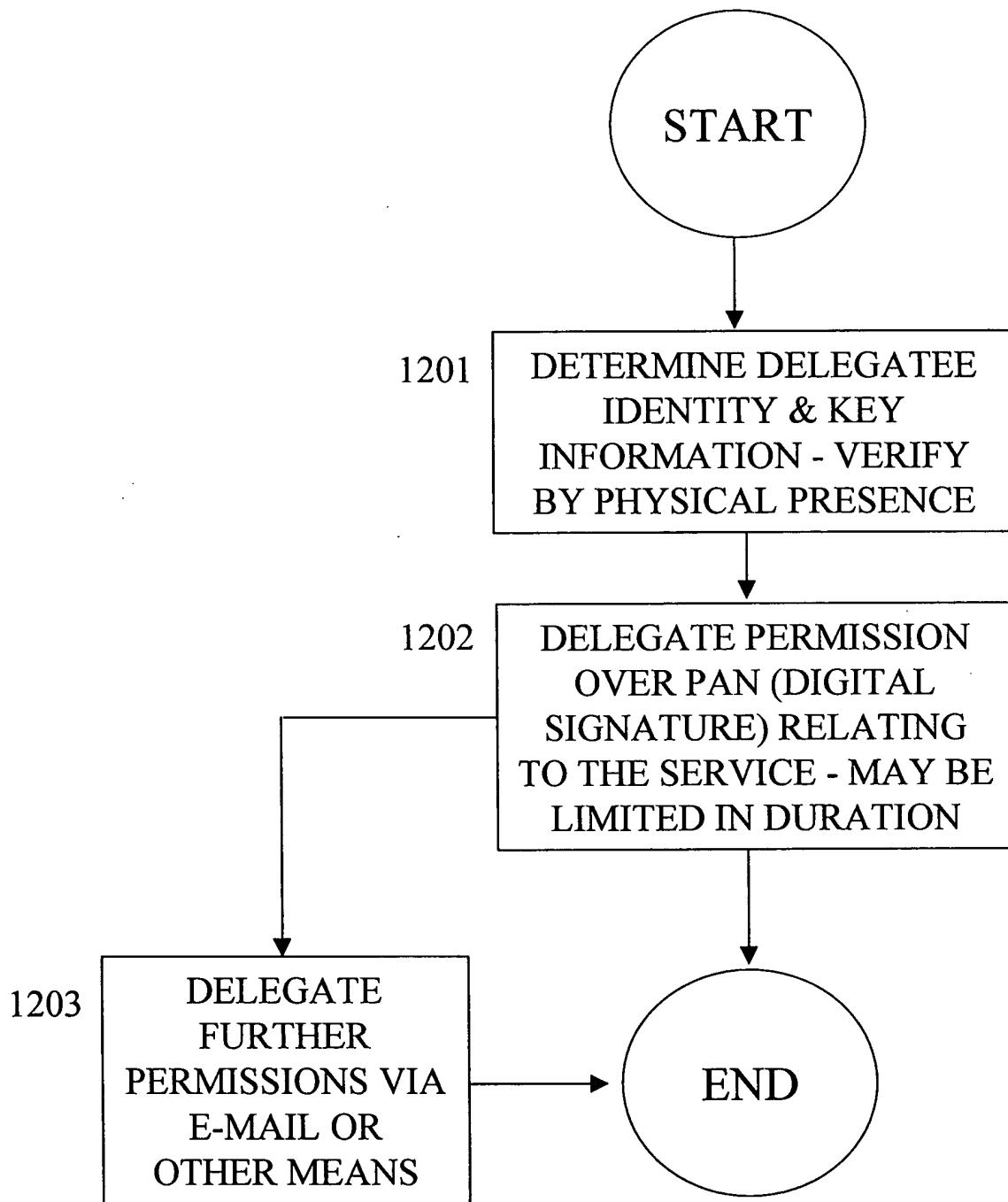


Fig. 13

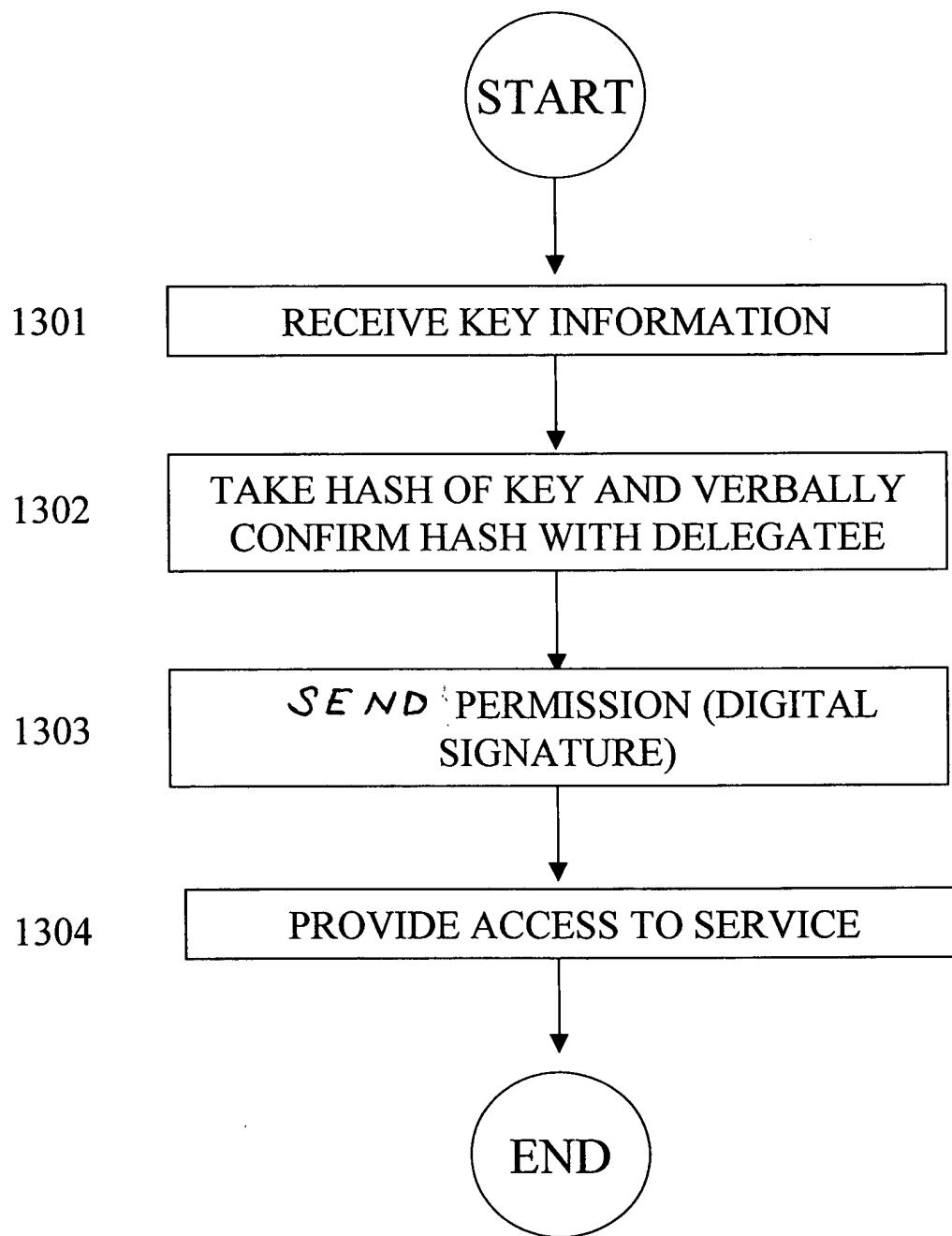


Fig. 14

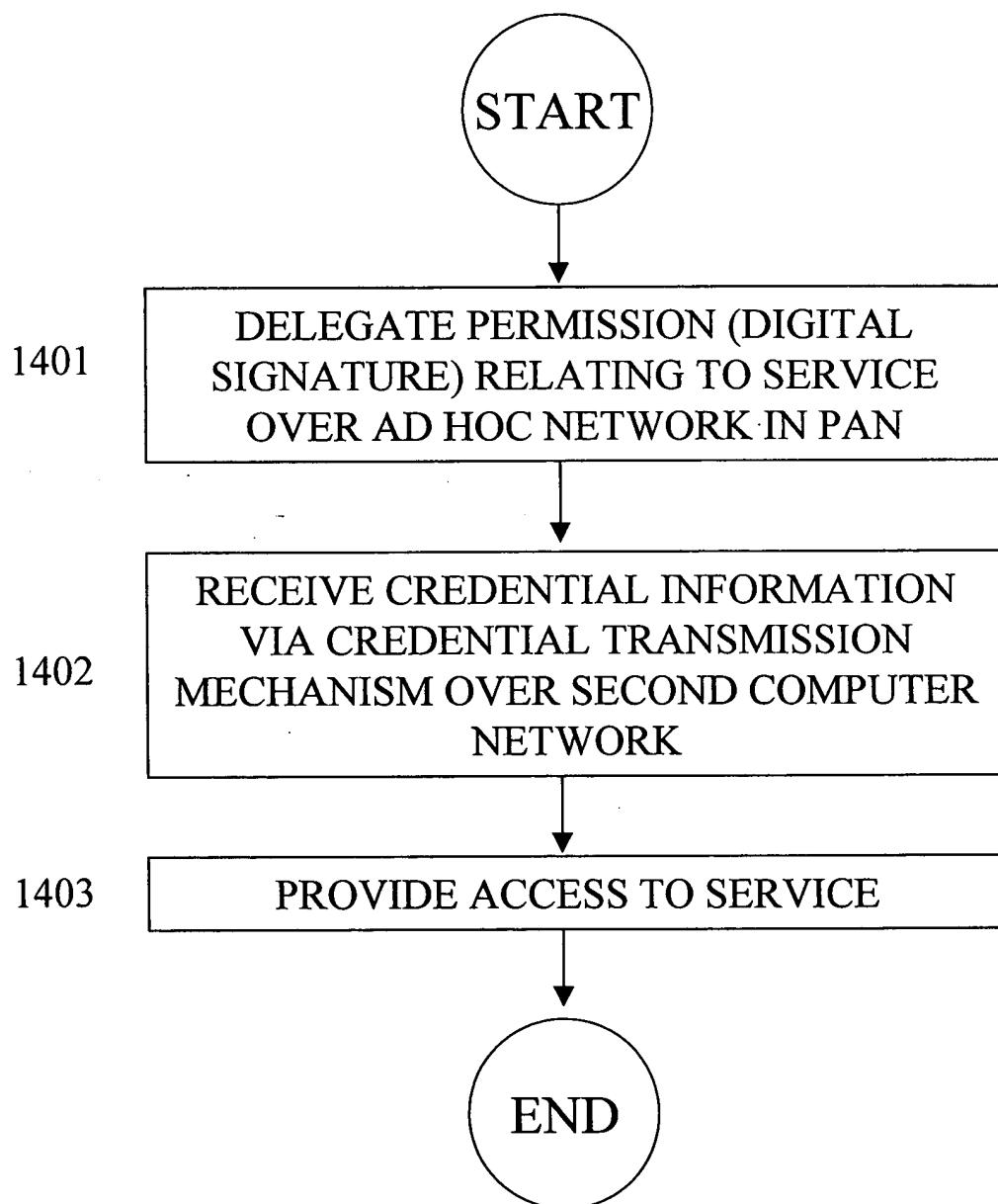


Fig. 15

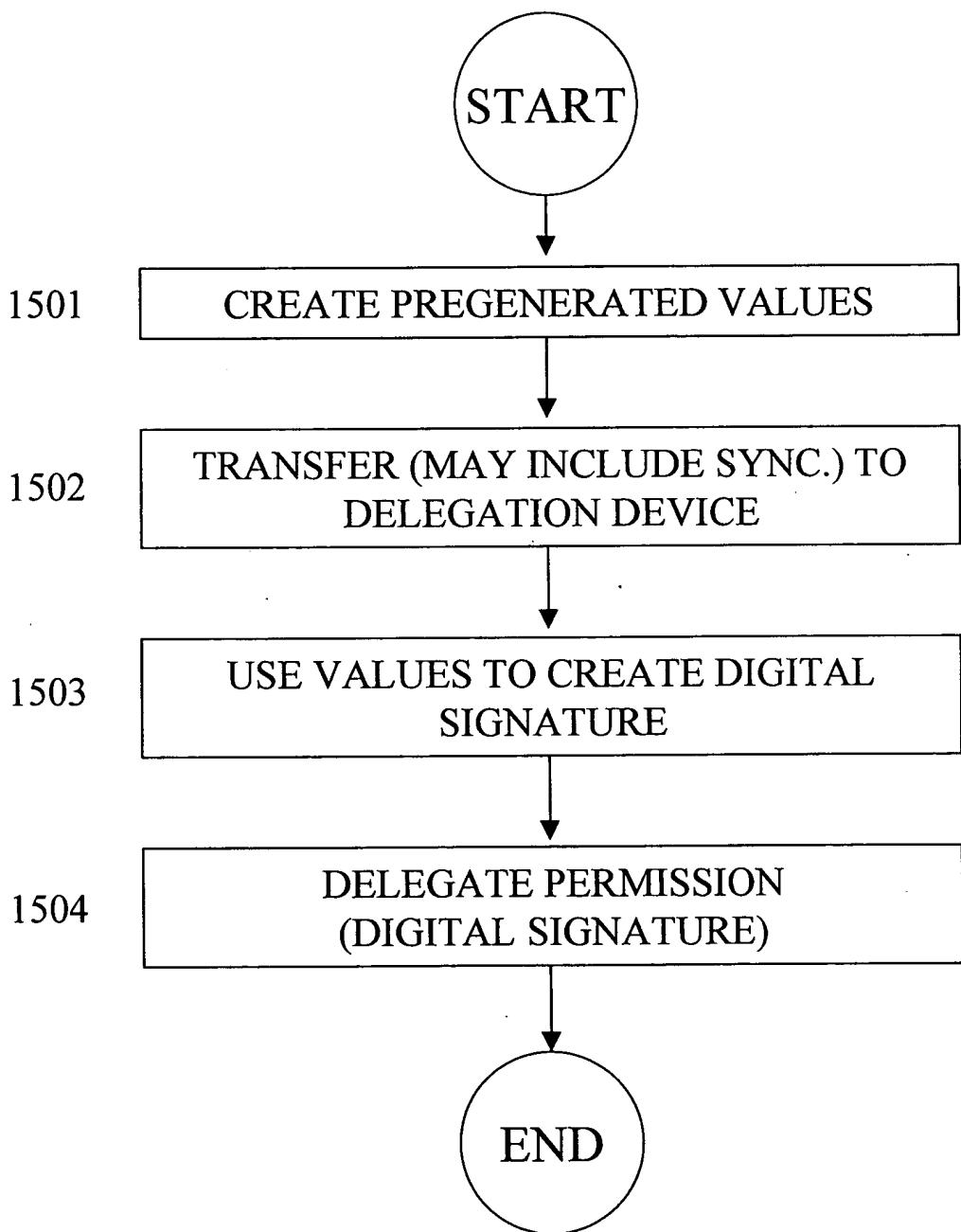


Fig. 16

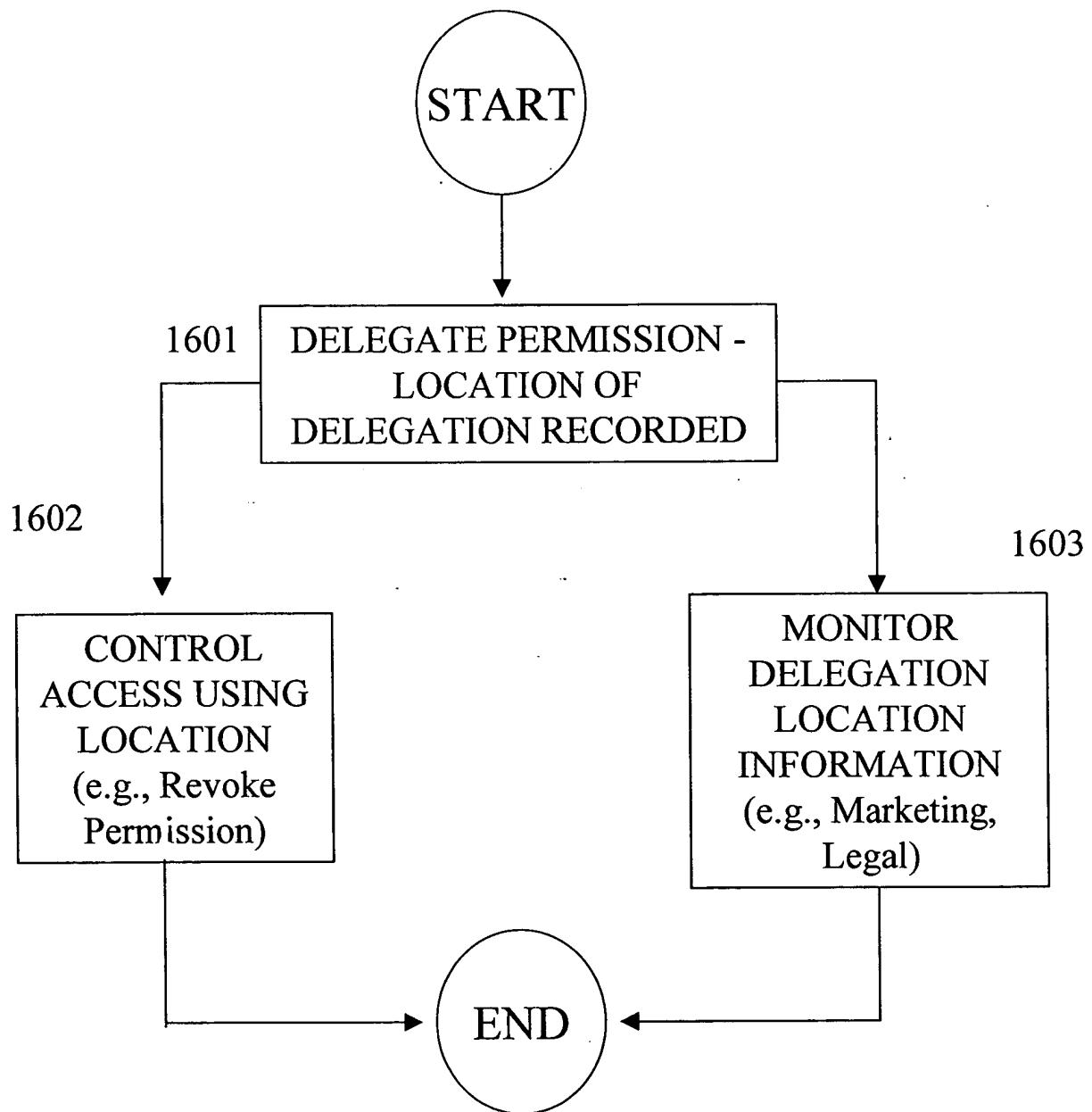


Fig. 17

